

Permit No. NM0020621

NPDES Permit No. AZ0024619

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq; the "Act"),

Upper Village of Moenkopi  
P.O. Box 1229  
Tuba City, Arizona 86045

is authorized to discharge treated wastewater from the Upper Village of Moenkopi Wastewater Treatment facility located in the upper village of Moenkopi, from Discharge Outfall Number 001,

Latitude: 36° 06' 30" N  
Longitude: 111° 14' 01" W

to receiving waters named Moenkopi Wash, tributary to the Little Colorado River, in accordance with effluent limitations, monitoring requirements and in the attached USEPA *Region 9 Standard Federal NPDES Permit Conditions*, dated June 3, 2002.

This permit shall become effective on \_\_\_\_\_.

This permit and the authorization to discharge shall expire at midnight, \_\_\_\_\_.

Signed this \_\_\_\_\_ day of \_\_\_\_\_

For the Regional Administrator

Alexis Strauss, Director  
Water Division  
EPA, Region 9

**SECTION A. EFFLUENT LIMITATION AND MONITORING REQUIREMENTS**

Based upon the current average capacity of 0.185 MGD, the permittee is authorized to discharge from Outfall Serial Number 001 treated domestic wastewater.

1. The influent shall be sampled after the last addition to the collection system and prior to any in-plant return flows and the first treatment process. The effluent shall be sampled after final treatment prior to mixing with the receiving waters in the Moenkopi Wash, tributary to the Little Colorado River.
2. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Monitoring Frequency <sup>1</sup>	Sample Type
Flow <sup>1</sup>	MGD	--	--	--	Once/month	Instantaneous
BOD <sub>5</sub> <sup>2</sup>	mg/l	30	45	--	Once/month	8-hour Composite
	kg/day	21	31	--		
TSS <sup>2</sup>	mg/l	30	45	--	Once/month	8-hour Composite
	kg/day	21	31	--		
<i>Escherichia coli</i> (E. coli)	#/100 ml	130 <sup>3</sup>	--	580 <sup>4</sup>	Once/week	Discrete
TRC <sup>5</sup>	µg/l	--	--	11.0	Once/month	Discrete
Total Dissolved Solids <sup>6</sup>	mg/l	--	--	500	Once/month	Discrete
Dissolved Oxygen <sup>7</sup>	mg/l	--	--	> 6.0	Once/month	24-hour Composite
NH <sub>3</sub> -N <sup>8</sup>	mg/l	--	--	--	Once/quarter	Discrete
pH <sup>9</sup>	std. units	between 6.5 to 9.0			Once/month	Discrete
Temp <sup>9</sup>	deg °F	--	--	--	Once/month	Discrete
Priority Pollutant Scan <sup>10</sup>	µg/l	--	--	--	Once/Year	24-hour Composite

**NOTES:**

1. Both the influent and effluent shall be monitored and reported. The effluent shall be sampled at the pipe coming out of Outfall Number 001. All samples shall be discrete unless otherwise noted.
2. For BOD<sub>5</sub> and TSS, the arithmetic means of values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of values, by weight, for influent samples collected at approximately the same times during the same period.
3. Geometric mean of a minimum of not less than five samples collected over a period of not more than 30 days.
4. Single sample maximum.
5. "TRC" = Total Residual Chlorine. If chlorination is used, the permittee shall at all times operate the plant to achieve the lowest possible residual chlorine while still complying with permit limits for E. coli.

TRC shall also be measured once/month at the outfall and reported on the Discharge Monitoring Reports, along with an estimate of the natural flow of the stream.

6. Both the plant effluent (Outfall Number 001) and the intake water supply shall be sampled. The incremental increase is the difference between the two sample analyses. The effluent value, intake water supply value, and incremental increase value shall be reported.

During periods of discharge, TDS or salinity shall be determined by the “calculation method” (sum of constituents) as described in the latest edition of “Techniques of Water Resources Investigations of the United States Geological Survey—Methods for Collection and Analysis of Water Samples for Dissolved Minerals and Gases.”

7. Minimum dissolved oxygen limit of 6 mg/l, based on the Hopi Water Quality Standards for aquatic and wildlife (warm water habitat) for support and propagation of animals, plants, or other organisms.
8. “NH<sub>3</sub>-N” = total ammonia nitrogen which includes the ammonium ion (NH<sub>4</sub><sup>+</sup>) and free ammonia (NH<sub>3</sub>), based on the Hopi Water Quality Standards for aquatic and wildlife (warm water habitat) for support and propagation of animals, plants, or other organisms.
9. Temperature and pH measurements shall be taken concurrently with measurements for ammonia.
10. Priority pollutants scan: The permittee shall monitor for the full list of priority pollutants as listed in the Code of Federal Regulations (CFR) at 40 CFR Part 423, Appendix A. No limit is set at this time.

Should the results of the first test reveal levels below EPA’s National Water Quality Criteria for priority pollutants, monitoring will no longer be required of the permittee. See Part B below.

## **SECTION B. GENERAL DISCHARGE SPECIFICATIONS**

1. The discharge shall be free from:
  - a. Water contaminants from other natural causes that will settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.
  - b. Objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream bands.)
  - c. True color-producing materials (other than those resulting from natural causes) that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body.
  - d. Odor and taste: Contaminants from other than natural causes shall be limited to concentrations that do not impart unpalatable flavor to fish, that do not result in offensive odor or taste arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods.
  - e. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth from other

than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. .

- f. Pathogens: Waters used for irrigation of table crops (e.g., lettuce) shall be free of *Salmonella* and *Shigella* species.
2. The discharge shall not cause:
  - a. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to the point at which aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 nephelometric turbidity units (NTU, a measure of turbidity in water) over background when background turbidity is 50 NTU or less, with no more than a 10-percent increase when background turbidity is more than 50 NTU
  - b. Radioactive Materials: Concentrations of radioactive constituents shall not exceed the concentration caused by naturally occurring materials.
  - c. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7°C (5°F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or 3 feet (whichever is less) outside the mixing zone. The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20°C/68°F for cold water fisheries and 32.2°C/90°F for warm water fisheries) would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.
  - d. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges, so as to interfere with the designated or attainable uses for a water body. An increase of more than one-third over naturally occurring levels shall not be permitted.
  - e. Toxic Substances: Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota.

## SECTION C. PERMIT REOPENER

Should any of the monitoring results indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursions above water quality criteria, the permit may be reopened for the imposition of water quality based limits and/or whole effluent toxicity limits. Also, this permit may be modified, in accordance with the requirements set forth at 40 CFR Parts 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any new EPA-approved Tribal water quality standards.

**SECTION D. BIOSOLIDS REQUIREMENTS**

1. The permittee shall submit a report 60 days prior to disposal of biosolids. The report shall include:
  - a. A map showing biosolids handling facilities (e.g. digesters, lagoons, drying beds, incinerators, location of land application and surface disposal sites).
  - b. The quantity of biosolids produced in dry metric tons.
  - c. The treatment applied to biosolids including process parameters. For example, if the biosolids are digested, report the average temperature and retention time of the digester. If drying beds are used, report depth of application and drying time. If composting is used, report the temperature achieved and duration. Also report dewatering methods and percent biosolids of final reports.
  - d. Disposal methods (e.g., 50% to landfill, 40% land applied, 10% sold as commercial product). Report the names and locations of all facilities receiving waste.
  - e. If biosolids are to be land-applied, analyses shall be conducted and submitted for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Molybdenum, Zinc, and Selenium, and for organic-N, ammonium-N, and nitrate-N. The analyses shall be performed using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) and test results shall be expressed in milligram (mg) pollutant per kilogram (kg) biosolids on a 100% dry weight basis.
  - f. If biosolids are placed in a surface disposal site, analyses shall be submitted for Arsenic, Chromium, and Nickel. A groundwater monitoring plan shall be submitted or a certification from a groundwater scientist that there is no potential for groundwater contamination.
2. The permittee shall comply with all standards for biosolids use and disposal established under Section 405(d) of the Clean Water Act, including existing standards under 40 CFR Parts 257, 258 and 503.
3. Reports for biosolids monitoring shall be submitted to:

Regional Biosolids Coordinator  
US EPA (WTR-7)  
75 Hawthorne Street  
San Francisco, CA 94105-3901

**SECTION E. MONITORING AND REPORTING****1. Reporting of Monitoring Results**

- a. The results of all monitoring required by this permit shall be submitted in such a format as to allow direct comparison with effluent limitations and permit requirements. Monitoring results shall be reported on monthly Discharge Monitoring Report (DMR) forms (EPA No. 3320-1) supplied by the Regional Administrator, to the extent that the

results reported may be entered on the forms. Monthly DMR forms shall be submitted quarterly on the 28th day of the month following the previous quarterly reporting period; for example, the three monthly DMR forms for the reporting period January through March shall be submitted by April 28th. Signed copies of these, and all other reports required herein, shall be submitted to:

U. S. Environmental Protection Agency, Region 9  
DMR/NPDES, Mailcode: WTR-7  
75 Hawthorne Street  
San Francisco, CA 94105

- b. Monitoring must be conducted in accordance with EPA test procedures approved under Title 40, U.S. Code of Federal Regulations (“CFR”), Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, as amended. For effluent analyses, the permittee shall utilize an analytical method with a published Method Detection Limit (MDL; as defined in Section F of this permit) that is lower than the effluent limitations (or lower than applicable numeric water quality criteria). If all published MDLs are higher than the effluent limitations or water quality criteria, then the permittee shall utilize the analytical method with the lowest published MDL. The permittee shall ensure that the laboratory utilizes a standard calibration where the lowest standard point is equal to or less than the minimum level (ML), as defined in Section F. of this permit.
- c. For samples collected during the monthly reporting period, report on the DMR form:
  - (1) The maximum value, if the maximum value is greater than the ML; or NODI (Q)<sup>1</sup>, if the maximum value is greater than or equal to the laboratory’s MDL, but less than the ML; or NODI (B)<sup>1</sup>, if the maximum value is less than the laboratory’s MDL; and
  - (2) The average value of all analytical results where 0 (zero) is substituted for NODI (B) and the laboratory’s MDL is substituted for NODI (Q), if more than one sample is collected during the monthly reporting period.
- d. As an attachment to each DMR form submitted during this permit term, the permittee shall report for all parameters with monitoring requirements specified under Section XX of this permit: the analytical method number or title, preparation and analytical procedure utilized by the laboratory, and published MDL or ML; the laboratory’s MDL, the standard deviation (S) from the laboratory’s MDL study, and the number of replicate analyses (n) used to compute the laboratory’s MDL; and the ML.

## 2. **Monitoring and Records**

In addition to the information requirements specified under 40 CFR 122.41(j)(3), records of monitoring information shall include: Laboratory(ies) which performed the analyses and any comments, case narrative or summary of results produced by the laboratory. These should identify and discuss QA/QC analyses performed concurrently during sample analyses and whether project and 40 CFR Part 136 requirements were met. The summary of results must

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<sup>1</sup> *NODI(Q)* means “No discharge/No data” (not quantifiable); *NODI(B)* means “No discharge/No data” (not detected).

include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, sample receipt condition, holding times, and preservation.

**3. Twenty-Four Hour Reporting of Noncompliance**

- a. In accordance with 40 CFR 122.41(l)(6), the permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances to the following person:

CWA Compliance Office Manager  
U.S. EPA Region 9  
(415) 972-3505

- b. If the permittee is unsuccessful in contacting the person above, the permittee shall report by 9 a.m. on the first business day following the noncompliance. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

**SECTION F. DEFINITIONS**

The following definitions shall apply unless otherwise specified in this permit:

1. “8-hour Composite sample” means, for flow rate measurements, the arithmetic mean of no fewer than 8 individual measurements taken at equal intervals for eight (8) hours or for the duration of discharge, whichever is shorter. An 8-hour composite sample means, for other than flow rate measurement, a combination of eight (8) individual portions obtained at equal time intervals for eight (8) hours or for the duration of the discharge, whichever is shorter. The volume of each individual portion shall be directly proportional to the discharge flow rate at the time of sampling. The sampling period shall coincide with the period of maximum discharge flow.
2. “24-hour Composite sample” means, for flow rate measurements, the arithmetic mean of no fewer than 8 individual measurements taken at equal intervals over any 24- hour period, or for the duration of discharge, whichever is shorter, that reasonably represents the calendar day. A 24-hour composite sample means, for other than flow rate measurement, a combination of eight (8) individual portions obtained at equal time intervals over any 24- hour period, or for the duration of discharge, whichever is shorter, that reasonably represents the calendar day. The volume of each individual portion shall be directly proportional to the discharge flow rate at the time of sampling. The sampling period shall coincide with the period of maximum discharge flow.
3. “Discrete sample” means any individual sample collected in less than 15 minutes.
4. “Daily discharge” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the

pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the sampling day.

5. “Daily discharge” determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the “daily discharge” determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that sampling day.
6. “Daily maximum” discharge limitation means the highest allowable “daily discharge” during the calendar month.
7. “Daily average” discharge limitation means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
8. “Discrete sample” means any individual sample collected in less than 15 minutes. The sampling period shall coincide with the period of maximum discharge flow.
9. “EPA” means the United States Environmental Protection Agency.
10. “Grab” sample, for monitoring requirements, is defined as a single “dip and take” sample collected at a representative point in the discharge stream.
11. “Instantaneous” measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
12. “Method Detection Limit (MDL)” is the minimum concentration of an analyte that can be detected with 99% confidence that the analyte concentration is greater than zero, as defined by the specific laboratory method listed in 40 CFR Part 136. The procedure for determination of a laboratory MDL is in 40 CFR Part 136, Appendix B.
13. “Minimum Level (ML)” is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed (as defined in EPA’s draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994). Published method-specific MLs are contained in 40 CFR Part 136, Appendix A, and must be utilized if available. If a published method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the published method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc. (When neither an ML nor an MDL are available under 40 CFR Part 136, an interim ML should be calculated by multiplying the best estimate of detection by a factor of 3.18; when a range of detection is given, the lower end value of the range of detection should be used to calculate the ML.)
14. “Monthly average” (or 30-day average) is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.



15. “Monthly average” concentration limitation means the arithmetic mean of consecutive measurements made during a calendar month. The “monthly average” concentration for fecal or total coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the  $n$ th root of the product of  $n$  numbers.
16. “Monthly average” mass limitation means the total discharge by mass during a calendar month, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the monthly average value shall be determined by the summation of all the measured discharges by mass divided by the number of days during the month when the measurements were made.
17. “Regional Administrator” means EPA Region 9’s Regional Administrator.
18. “Weekly average” (or 7-day average) is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.